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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/127,644	07/31/98	SCHOB R	15258-337

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EXAMINER	
TAMAI,K	
ART UNIT	**PAPER NUMBER**
2834	7

DATE MAILED: 03/01/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/127,644	Schob
Examiner	**Group Art Unit**
Karl Tamai	2834

☒ Responsive to communication(s) filed on *Dec 8, 1999*

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-22* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-10, 14, 15, and 17-21* is/are rejected.

☒ Claim(s) *11-13, 16, and 22* is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on *Dec 8, 1999* is ☒ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Drawings

1. The objection to the drawings under 37 CFR 1.84(h)(5) is withdrawn.

2. The objection to the drawings under 37 CFR 1.83(a) is withdrawn.

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on December 2, 1999 have been approved.

Specification

4. The new title "MAGNETICALLY JOURNALLED ROTATIONAL ARANGEMENT INCLUDING A ROTOR FOR GENERATING A UNIPOLAR BIAS MAGNETIC FLUX" has been entered into the file wrapper. The requirement for a new title is withdrawn.

5. The objection to the abstract is withdrawn.

6. A substitute specification excluding claims is required pursuant to 37 CFR 1.125(a) because the amendment to the specification filed on December 2, 1999 includes numerous amendments which create difficulties in considering the completeness of the application.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement

that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

7. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification, such as spelling errors "recognises" on page 7, line 32, and "magnetised" throughout the specification. United States Patent office policy regarding the content of the specification does not include the inventors name, address, and citizenship on page 1 of the specification. The inventors names, addresses, and citizenship should be deleted from the first two lines of page 1.(The examiner notes the amendment filed on December 2, 1999 appears to correct the above cited minor errors).

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. The rejection of Claim under 35 U.S.C. 112, second paragraph, is withdrawn.

Claim Rejections - 35 USC § 102

10. The rejection of Claims 1, 8, 9, and 10 under 35 U.S.C. 102(b) is withdrawn.

11. The rejection of Claims 1, 8, 20, and 21 under 35 U.S.C. 102(b) over Schoeb et al. is withdrawn.

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claims 1, 2, 4, 8, 9, 10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols and Lyman. Nichols teaches a magnetically levitated ring shaped rotor which the stator having axially aligned levitating magnets and circumferentially disposed field windings 40 to rotate the rotor. Nichols teaches unipolar rotor flux in the ferromagnetic, reluctance poles of the rotor which close the magnetic circuit with the stator bearing magnets 38. Nichols teaches control windings 42 on the stator to control the unipolar magnetic bearing flux. Nichols teaches every aspect of the invention, except permanent magnets on the rotor creating unipolar magnetic bearing flux and an additional stator(or two) in a plane parallel with bearing plane. Lyman teaches an axially oriented permanent magnet 31 on the rotor to provide magnetic bearing flux across the air gap with the stator. Lyman teaches the rotor can be either disk shaped inside the ring shaped stator or the rotor can be ring shaped outside the stator. Lyman teaches a plurality of stators in

parallel to provide magnetic bearing support to the rotor. Nichols teaches the permanent magnet producing the bearing flux being four circumferentially spaced magnets 38a rather than a single permanent magnet. It would have been obvious to a person skilled in the art at the time of the invention to construct the motor of Nichols with the permanent magnet on the rotor as in Lyman to efficiently support a rotor with a large moment of inertia, and with a first and second stator in parallel with the bearing plane because Lyman teaches a plurality of bearing disks provide additional support to rotor.

14. Claims 3, 5, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols and Lyman, in further view of Shimamoto. Nichols and Lyman teach every aspect of the invention, except permanent magnets on opposite sides of the disk shaped or ring shaped rotor to creating unipolar magnetic bearing flux. Shimamoto teaches an axially magnetized permanent magnets 62/64 on the stator having control windings 88 and axially magnetized permanent magnets 70/72 on the rotor, where the permanent magnets 62/64 and 70/72 are positioned on opposite sides of a rotor ring 56 and stator disk 48. It would have been obvious to a person skilled in the art at the time of the invention to construct the motor of Nichols and Lyman with the permanent magnet on opposite sides of the rotor disk/ring, as in Shimamoto to reduce the number of control windings need to adjust the magnetic bearings.

15. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols, Lyman, and Shimamoto, in further view of Machino. Nichols, Lyman, and Shimamoto teach every aspect of the invention, except the permanent magnets on the rotor and stator being both radially aligned and alternately aligned(one axially/one radially magnetized). Machino teaches the equivalence of permanent magnets being both axially aligned(figure 1a), both radially aligned (figure 1b) and alternately aligned(figure 3 showing the stator magnet being radially magnetized with the rotor magnet being axially aligned). It would have been obvious to a person skilled in the art at the time of the invention to construct the motor of Nichols, Lyman, and Shimamoto with the bearing magnets on the rotor and stator being both radially aligned or alternately aligned because Machino teaches the equivalence of the magnetization of the bearings being axially, radially or alternatively magnetized, and it would have an obvious selection of equivalents to choose between different magnetization for the bearing.

16. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols and Lyman, in further view of German Patent 945,183('183). Nichols and Lyman teach every aspect of the invention except, a rotatable drive which can be magnetically coupled to the rotor. '183 teaches a magnetic couple drive with a radial magnetic couple 20 and an axial magnetic couple 11 which are equivalent to a motor driven 28 rotor. It would have been obvious to a person skilled in the art at the time of the invention to construct the motor of Nichols and Lyman with the magnetic couple drive because '183 teaches the equivalence of a magnetic couple drive and a

motor drive, such that it would have been an obvious design choice to select between known equivalents, and because a mechanical drive allows the drive source to be positioned away from the rotor.

17. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols and Lyman, in further view of Schoeb. Nichols and Lyman teach every aspect of the invention, except the use of the motor in biological liquids and in a bio-reactor. Schoeb teaches the use of motors in biological liquids and in a bio-reactor. It would have been obvious to a person skilled in the art at the time of the invention to construct the motor of Nichols and Lyman for use in biological liquids to allow the motors to operate as blood pumps, as in Schoeb.

Allowable Subject Matter

18. Claims 11-13, 16, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

19. Applicant's arguments filed December 2, 1999 have been fully considered but they are not persuasive. The Applicant's argument that Nichols does not suggest the generation of bias flux on the rotor is not persuasive. The combined teaches of the prior art in Nichols and Lyman teaches the bias flux can be positioned on either the rotor or the stator. Additionally, it has been held that merely rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Conclusion

20. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066. The examiner can be normally contacted on Monday through Friday from 8:00 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703)308-1371. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist at (703) 308-0956.

Karl I. Tamai

Karl I Tamai
February 23, 2000

ELVIN ENAD
PRIMARY EXAMINER
2/25/2000